

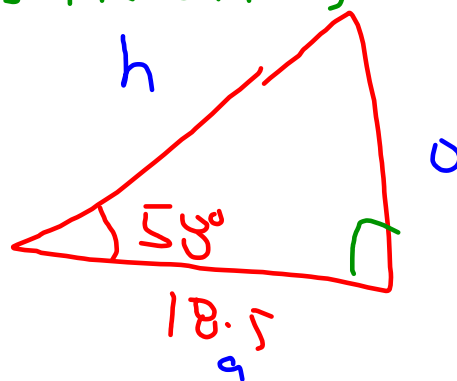
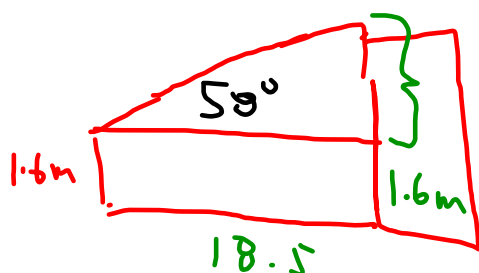
Map 4C Opener

A surveyor measures the angle of elevation to the top of a building to be 58° . The surveyor's measuring instrument is 1.6 m above the ground, 18.5 m from the base of the building. How tall is the building?

Feb 4-7:58 AM

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Feb 4-7:58 AM

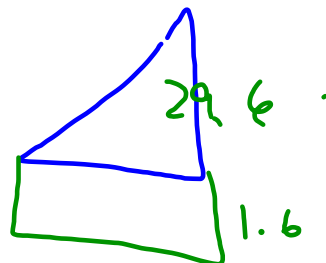
$$18.5 (\tan 58^\circ) = \left(\frac{0}{18.5} \right) 18.5$$

$$18.5 (\tan 58^\circ) = 0$$

$$18.5 (1.6003) = 0$$

$$29.6 = 0$$


$$29.6 + 1.6 = 31.2 \text{ m}$$



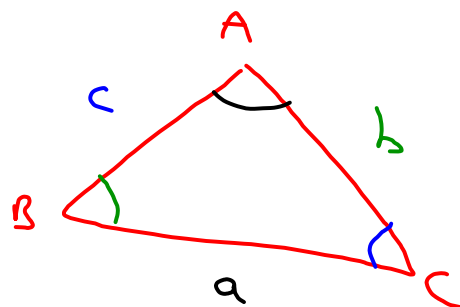
Feb 4-12:35 PM

Map 4C Sine Law 2.3 p. 96- 103

Sine Law

(when you don't have )

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$



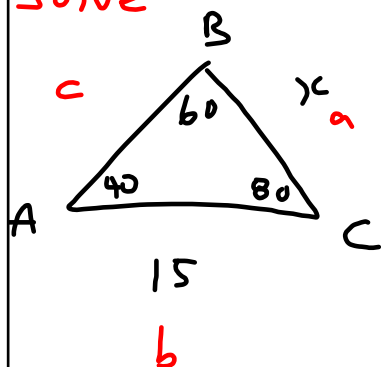
Angles are always
capital letters

Sides are always
lower case

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Feb 4-8:24 AM

Solve



$$\frac{15}{\sin 60} = \frac{x}{\sin 40}$$

$$\frac{15 (\sin 40)}{\sin 60} = x$$

$$a = \frac{15 \sin 40}{\sin 60}$$

$$a = \frac{15(0.6427)}{0.8660}$$

$$= 11.1$$

Feb 4-12:52 PM

$$a = \frac{15(0.6427)}{0.8660}$$

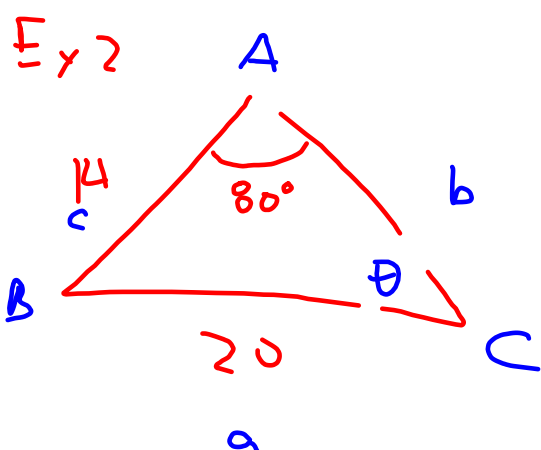
$$a = \frac{9.6405}{0.8660}$$

$$a = 11.1$$

$$c = 17.1$$

$$\frac{\sin C b}{b} = \frac{\sin C c}{c}$$

Feb 4-12:58 PM



Ex 2

$$\frac{\sin 80^\circ}{20} = \frac{\sin \theta}{14}$$

$$\frac{\sin 80^\circ (14)}{20} = \sin \theta$$

$$\frac{(0.9848) \cdot 14}{20} = \sin \theta$$

$$0.6894 = \sin \theta$$

$$\sin^{-1}(0.6894) = \theta$$

$$44^\circ = \angle \theta$$

Feb 4-1:04 PM

Key Concepts

- works to solve angles and sides in non-right triangles
- side length can be determined if the corresponding opposite angle plus one other side-angle pair is known (matching pair)
- $\sin A / a = \sin B / b = \sin C / c$

Hmk. p101- 103

q. 2,3,5,7,10,11,14

Jun 13-7:10 AM